APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
HENRY, MATTHEW ALLAN

ART UNIT	PAPER NUMBER
2116	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/015,533	FISH ET AL.
	Examiner	Art Unit	
	Matthew A. Henry	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>11 December 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *3/12/2002*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   **The drawings are objected to under 37 CFR 1.83(a) because Figure 2B fails to show the "illustrated interactions of various components of an EFI specification-compliant system" as described in the specification in Paragraph 33, Lines 1-3.** As drawn, the components of the system are shown, however the interactions are omitted.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

2.   **The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Item 415 in Figure 4.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3.   The attempt to incorporate subject matter into this application by reference to http://acpi-info/index-html, http://developer-intel-com/ial/WfM/design/BIBLIOG.HTM and http://developer-intel-com/technology/efi/main_specification.htm are improper because they are embedded hyperlinks. Applicant is required to delete the embedded hyperlinks. See MPEP § 608.01.

4.   The disclosure is objected to because of the following informalities:

On Page 5, Paragraph 16, Line 11, the phrase "may basically exists" is unclear.

Appropriate correction is required.

5.   The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Method and System for Reducing BIOS ROM by Distributing Firmware Components to a Mass Storage Device.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   **Claims 1-3, 5-8 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Harmer.**

Regarding Claim 1, Harmer discloses:

A system comprising (Figure 9, Item 200):

central processor (Column 13, Lines 40-41);

a non-volatile memory coupled with the central processor and storing platform firmware (Column 8, Lines 48-49; Figure 5, Items 108 and 104; Item 104 represents a BIOS, Item 108 represents a system ROM); and

a machine-readable medium (Column 13, Lines 43-45; Figure 9, Item 204) coupled with the central processor, the machine-readable medium to be used in initializing an operating environment for the system upon power up (Column 13, Lines 45-47), the machine-readable medium comprising a first set of instructions (Column 9, Lines 49-54; Figure 6A, Item 128) forming at least a portion of the operating environment (Column 9, Lines 26-29), and a second set of instructions (Column 9, Line 40; Figure 6A, Item 120) defining one or more firmware extensions to enable the system to access the first set of instructions (Column 11, Lines 34-36; Item 124, a component of the first BIOS portion, enables the second portion by running initialization code of the second portion.).

Regarding Claim 2, Harmer discloses:

the machine-readable medium comprises a hard disk platter (Column 13, Lines 47-50).

Regarding Claim 3, Harmer discloses:

the one or more firmware extensions comprise a file system driver to support a file system format not supported by the platform firmware (Column 9, Lines 49-54; Figure 6B, Item 130).

Regarding Claim 5, Harmer discloses:

the central processor comprises a central processing unit housed in a single chip (Column 1, Lines 31-35).

Regarding Claim 6, Harmer discloses:

a volatile memory (Column 13. Line 41, Figure 9, Item 106); and

a motherboard coupling the volatile memory, the non-volatile memory and the machine-readable medium with the central processing unit (Figure 9, Item 200; A motherboard by definition connects the main components of a computer system. Although not explicitly mentioned, it is considered inherent to the operation of the system.)

Regarding Claim 7, Harmer discloses:

A machine-readable medium (Column 13, Lines 43-45; Figure 9, Item 204) comprising:

a first set of instructions defining operations for enabling a machine to access a second set of instructions (Column 11, Lines 34-36; Item 124, a component of the first BIOS portion, enables the second portion by running initialization code of the second portion.) comprising at least a portion of an operating system stored on the machine-readable medium in a format that is unreadable by the machine before the machine loads the first set of instructions (Column 9, Lines 49-54; Figure 6B, Item 130); and

the second set of instructions (Column 9, Lines 49-54; Figure 6B, Item 128).

Regarding Claim 8, Harmer discloses:

the first set of instructions comprise one or more extensions to platform firmware capability (Column 13, Lines 63-66).

Regarding Claim 17, Harmer discloses:

A data processing system (Figure 9, Item 200) comprising:

means for processing instructions and data (Column 13, Lines 40-41);

non-volatile memory means for storing platform firmware (Column 8, Lines 48-49;

Figure 5, Items 108 and 104; Item 104 represents a BIOS, Item 108 represents a system ROM);

and

mass storage means (Column 13, Lines 43-45; Figure 9, Item 204) providing means for

extending platform firmware capabilities during system booting (Column 9, Lines 26-29) before

an operating system loader is loaded and run (Column 11, Lines 50-51; Figure 10, Item 170).

Regarding Claim 18, Harmer discloses:

the mass storage means comprises an optical disk (Column 13, Lines 47-50; a compact

disk is an optical disk).

Regarding Claim 19, Harmer discloses:

the means for extending platform firmware capabilities comprise a file system driver to

support file system format not supported by the platform firmware (Column 9, Lines 49-54;

Figure 6B, Item 130).

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Harmer in view of *BIOS Updates*.

Regarding Claim 4, Harmer discloses:

the non-volatile memory (Column 13, Lines 41-42, Figure 9, Item 108).

Harmer does not disclose a non-volatile memory that comprises a random access non-volatile memory.

BIOS Updates teaches:

the non-volatile memory comprises random access non-volatile memory (*BIOS Updates*, Paragraph 2, Lines 5-6).

The motivation for using a random access non-volatile memory, in this case an EEPROM, allows for "a ROM that can be erased and re-written" (*BIOS Updates*, Paragraph 3, Line 3). This will allow for updates to be made to the BIOS without requiring physical replacement of ROM chips.

Accordingly, it would have been obvious to a person of ordinary skill in the art to modify the device disclosed by Harmer to incorporate a non-volatile random access memory as described by *BIOS Updates* for the benefit of providing a circuit housing a BIOS that is more readably modifiable.

Concerning Claim 20, Harmer discloses:

A non-volatile memory (Column 13, Lines 41-42, Figure 9, Item 108).

Harmer does not disclose a non-volatile memory that comprises a random access non-volatile memory.

BIOS Updates teaches:

the non-volatile memory means comprises random access non-volatile memory (*BIOS Updates*, Paragraph 2, Lines 5-6).

The motivation for using a random access non-volatile memory, in this case an EEPROM, allows for "a ROM that can be erased and re-written" (*BIOS Updates*, Paragraph 3,

Line 3). This will allow for updates to be made to the BIOS without requiring physical

replacement of ROM chips.

Accordingly, it would have been obvious to a person of ordinary skill in the art to modify

the device disclosed by Harmer to incorporate a non-volatile random access memory as

described by *BIOS Updates* for the benefit of providing a circuit housing a BIOS that is more

readably modifiable.

10.   Claims 9-11 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Harmer in view of Rakavy.

Regarding Claim 9, Harmer discloses:

the portion of an operating system comprises operating data [that] may include, but is not

limited to, system configuration information, data, text, passwords, or any other information that

may provide some purpose during the start-up of the system (Column 16, Lines 20-24).

Harmer does not disclose specifically this operating data includes an operating system

loader.

Rakavy teaches:

The POST reads a block of data from a predetermined location from the boot device,

usually the hard disk or a diskette drive, into memory, and passes control to the program in that

data block. This program, known as a bootstrap loader, then loads a larger program into

memory. If the larger program is properly loaded into memory the boot program passes control

to it. The operating system is then initialized and gains control of the CPU" (Column 2, Lines

27-34).

Rakavy provides this as background for the methodology of the "typical startup procedure of an IBM compatible personal computer" (Column 1, Lines 64-66).

This standard behavior would accordingly suggest that it would be obvious to a person of ordinary skill in the art that, though Harmer does not specifically mention an operating system or bootstrap loader, his invention would follow this standard startup procedure and provide such a program because it serves an important purpose during the start-up of the system.

Regarding Claim 10, Harmer further discloses:

the one or more extensions to platform firmware capability comprise a file system driver to support a file system format used to store at least a portion of the second set of instructions (Column 11, Lines 34-36; the file system described consists of giving the first portion of the expansion BIOS the ability to find and read the second portion of the expansion BIOS).

Regarding Claim 11, Harmer further discloses:

the one or more extensions to platform firmware capability comprise glyphs that represent a language (Column 57-62, glyphs are graphical in nature).

Regarding Claim 13, Harmer discloses:

A machine-implemented method for extending platform firmware capabilities (Column 8, Lines 41-44), the method comprising:

loading one or more firmware extensions (Column 8, Lines 41-44) from a boot media (Column 46-47);

booting the system (Column 13, Lines 53-56); and

loading and running operating data [that] may include, but is not limited to, system configuration information, data, text, passwords, or any other information that may provide some

purpose during the start-up of the system from the boot media (Column 16, Lines 20-24) using

the one or more loaded firmware extensions (Column 15, Lines 49-53).

Harmer does not disclose specifically the loading and running an operating system loader

from the boot media using the one or more loaded firmware extensions.

Rakavy teaches:

The POST reads a block of data from a predetermined location from the boot device,

usually the hard disk or a diskette drive, into memory, and passes control to the program in that

data block. This program, known as a bootstrap loader, then loads a larger program into

memory. If the larger program is properly loaded into memory the boot program passes control

to it. The operating system is then initialized and gains control of the CPU" (Column 2, Lines

27-34).

Rakavy provides this as background for the methodology of the "typical startup

procedure of an IBM compatible personal computer" (Column 1, Lines 64-66).

This standard behavior would accordingly suggest that it would be obvious to a person of

ordinary skill in the art that, though Harmer does not specifically mention an operating system or

bootstrap loader, his invention would follow this standard startup procedure and provide such a

program because it serves an important purpose during the start-up of the system.

Regarding Claim 14, Harmer further discloses:

loading one or more firmware extensions from a boot media during a system boot in such

a manner that abstracts a mass storage device containing the boot media (Column 13, Lines 47-

50).

Harmer does not disclose the method for this abstraction as incorporating a block

input/output protocol.

Rakavy further teaches:

POST reads a block of data from a predetermined location from the boot device, usually

the hard disk or a diskette drive (Column 2, Lines 27-29).

Regarding Claim 15, Harmer further discloses:

the one or more firmware extensions comprise a file system driver to support a file

system format used to store data on the boot media (Column 11, Lines 34-36; the file system

described consists of giving the first portion of the expansion BIOS the ability to find and read

the second portion of the expansion BIOS).

Regarding Claim 16, Harmer further discloses:

the one or more firmware extensions further comprise glyphs that represent a language

(Column 57-62, glyphs are graphical in nature).

11.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harmer in

view of Rakavy, in further view of *Unicode Technical Report #10*.

Regarding Claim 12, Harmer discloses:

This general concept of storing information required during the start-up of the system

may include a variety of operating data, text, or other information that increases the functionality

of the system during the start-up of the system (Column 15, Lines 54-57).

Harmer does not disclose the inclusion of a Unicode collation module as an extension to

a system that may be stored on a mass memory storage device.

However, *Unicode Technical Report #10* shows a Unicode Collation Algorithm is a well known method for providing alphabetic, diacritic and case ordering (Page 2, Section "Summary", Paragraph 3, Lines 4-6).

The motivation behind ordering/collation is that sorted entities are far more searchable than ones that are not.

Sorting is a fundamental task in computers and it would be obvious to a person of ordinary skill in the art to modify Harmer to incorporate a Unicode collation algorithm as a method of increasing the functionality of a computer system "without increasing the cost of the peripheral device and/or the system"(Column 15, Lines 52-53).
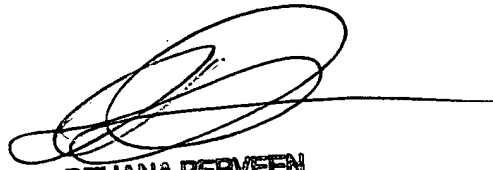
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Henry whose telephone number is (571) 272-3845. The examiner can normally be reached on Monday - Friday (8:00 am -5:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAH

REHANA PERVEEN
PRIMARY EXAMINER